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of Kansas and Nebraska are based on fragments of horn cores. These indicate animals much larger than the existing species, but smaller than the large extinct *Bison latifrons*. Another interesting type of mammal combines some of the features of the ungulates with others of the rodents, to which latter it is evidently related. The species (*Allomys nitens*) is founded on remains from the Upper Miocene of Oregon, and is regarded as representing a distinct family, *Allomyidæ*. A new bird of the size of a small duck is characterized from remains from the Cretaceous of Texas.

GEOGRAPHY AND EXPLORATION.

EXPLORATION IN PATAGONIA.—Don F. P. Moreno has recently made an exploration from Santa Cruz Bay, by way of the Santa Cruz River, northward across the high interior of Patagonia, the so-called "Plains of Mystery" of Admiral Fitz Roy, to the base of the Cordilleras. He explored the lake, which had never before been sailed upon, forming the source of the Santa Cruz, and crossed the tertiary tablelands to the northward. These plains have an altitude of two thousand five hundred to three thousand feet, with summits capped with basalt. To the westward and northward he met with a chain of small lakes inclosed by excellent pasture, and later reached an unknown lake of considerable dimensions, named by him Lago San Martin. The lake is surrounded with snow-capped mountains, which are wooded on the sides and rise to a height of three thousand to five thousand feet. He also visited the so-called Viedma Lake, and made collections of fossils from the plains. On a portion of the shores of the lake from which the Santa Cruz takes its rise was discovered an ancient habitation of some of the primitive people of Patagonia. A detailed report of his expedition is promised.

HEIGHTS IN THE BOLIVIAN ANDES.—According to the *Geographical Magazine*, Mr. Minchin, the civil engineer who has been doing such useful geographical work in Bolivia, has determined, from the results of his leveling for the railways between La Paz and Lake Titicaca, the height of the peak of Illimani to be 22,224 feet, which he thinks cannot vary more than ten feet from its true height. It is hence about 175 feet lower than the elevation given by the most trustworthy measurements for the peak of Aconcagua in Chili, believed to be the highest point of the Andes. Mr. Minchin gives the height of Lake Titicaca as 12,545 feet, or 245 feet less than Pentland's height, based on barometric measurement. The height of Alto de la Paz is given as 13,389 feet, and that of Plaza Mayor, La Paz, as 11,946 feet.

GEOGRAPHICAL NEWS.—Mr. F. A. Edwards has published, in the *Gentleman's Magazine* for August, a paper on Colonel Gordon's Expedition to the Upper Nile Region, illustrated by a sketch map. The *Geographical Magazine* for August contains a sketch map of the coun-

try round Lake N'yassa. In the same number is an extended notice, by Keith Johnston, of the cartographical publications of the Indian Survey. These include, besides numerous maps of special districts, the "long-expected" General Map of India. A book relating to the discoveries of the fifteenth century has been published by Richard Henry Major, entitled *The Discoveries of Prince Henry the Navigator, and their Results*; being the Narrative of the Discovery by Sea, within One Century, of More than Half the World. This period includes the exploration of the coasts of Africa, the discovery of America and Australia, the circumnavigation of the globe, and the opening of a sea-way to India, the Moluccas, and China. J. W. Boddam Whetham, in a book entitled *Across Central America*, gives interesting notes of travel through a hitherto rarely visited region, with an account of some of the wonderful ruins of Central America.

MICROSCOPY.¹

E. GUNDLACH'S NEW PERISCOPIC EYE-PIECE.—The Hughenian eye-piece, as originally constructed, consists, as is well known, of two plano-convex lenses, of which one, the field-lens, has three times the focal length of the other, the eye-lens, the distance between the two being equal to double the focal length of the eye-lens, the plane side of the field-lens facing the convex side of the eye-lens.

The field-lens not only widens the field of view but also corrects the spherical as well as the chromatic aberration, as it is placed beyond the focal distance of the eye-lens (which is the actual eye-piece), and in consequence thereof acts negatively to the same.

This correction, however, is not a complete one, for with the most favorable distance between the two lenses a not inconsiderable remnant of the chromatic aberration still remains, while the spherical aberration is already correspondingly over-corrected. The first is noticeable by the blue edge bordering that side of the object which is turned toward the centre, when the object is placed towards the edge of the field; the remnant of the spherical aberration causes the distortion and want of sharpness of definition at the edge of the field. By increasing the distance between the field-lens and eye-lens the blue color may indeed be made to disappear, but the spherical aberration increases correspondingly, and the field is narrowed considerably. If, on the contrary, the field-lens is brought closer to the eye-lens, the spherical aberration is certainly diminished; but notwithstanding this, the image at the edge of the field does not become any more sharply defined, because the chromatic aberration has increased in equal ratio.

One advantage, however, is gained by approaching the field-lens closer to the eye-lens, namely, a considerable widening of the field.

If, under these circumstances, the aberrations of the eye-lens are cor-

¹ Conducted by DR. R. H. WARD, Troy, N. Y.